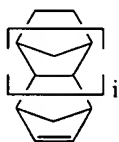


REMARKS/ARGUMENTS

Claims 1-21 are pending in this application. Claims 1, 4, 5, 20, and 21 have been amended. Upon entry of this amendment, claims 1-21 will be pending.

Rejection under 35 USC §102

Claims 1-3 and 5-19 are rejected as being anticipated by Lee et al U.S. Pat. No. 6,403,281 B1 ("Lee"). The Examiner notes that Lee teaches the polymer of formula 10 (col. 6, lines 18-67) as a preferred photoresist polymer, and that two of the repeating units in the polymer of formula 10 are straight chain C₄ esters including one hydroxyl group according to one limitation of the rejected claims. However, it should also be noted that Lee discloses and claims only photoresist polymers wherein at least one of the repeating units is derived from a monomer of the following formula (ii):



wherein i is 0 or 1. For example, see Formulas 10 and 11, Examples 1-6, and claim 1, col. 13, line 49 - col. 14, line 35.

Lee teaches that the monomer of formula (ii) is a necessary component of the photoresist polymer. For example, Lee states at col. 8, line 64 to col. 9, line 5:

"As shown in formulas 10 and 11, polymers of the present invention can comprise a polymeric unit derived from a monomer comprising a sterically bulky group. Accordingly, a predetermined amount of norbornylene and tetracylododecene having a relatively small steric hindrance is added to make it possible to properly control the molecular weight of the polymer to about 5000 to about 8000, to increase the polymerization yield to about 40% or more and to improve the thermal stability of the polymer."

In contrast to the teachings of Lee, the polymers of the present invention do not contain any repeating units of a monomer of Lee's formula (ii), i.e. unsubstituted norbornylene

and tetracyclododecene. For example, see Chemical Formula 6 of Example 1 and Chemical Formula 7 of Example 2 of the present application, as well as the allowable subject matter of original claim 4. To more particularly point out and distinctly claim this aspect of applicant's invention, independent claims 1 and 5 have been amended to introduce the limitation that all of R_1 , R_2 , R_3 , and R_4 do not represent hydrogen at the same time. Accordingly, it is respectfully submitted that amended claim 1, and claims 2-3 dependent thereon, and amended claim 5, and claims 6-19 dependent thereon, avoid the rejection and are placed in condition for immediate allowance.

Rejection under 35 USC §103

Claims 20 and 21 are rejected as being obvious over Lee. The Examiner contends that it would have been obvious to prepare a photoresist copolymer employing 1,3-butanediol diacrylate or 1,4-butanediol diacrylate as a cross-linker monomer in combination with two or more alicyclic olefin derivatives of chemical formula 4 of applicants' claim 20 or the corresponding formula of applicants' claim 21 in light of Lee's teaching of a cross-linker monomer of formula 1, e.g. at col. 2, line 40 - col. 3, line 13. As discussed above, Lee discloses and claims only photoresist polymers wherein at least one of the alicyclic olefin derivatives is a monomer of (ii), in order to properly control the molecular weight of the polymer, increase the polymerization yield, and improve the thermal stability of the polymer. Claims 20 and 21 have been amended to introduce the limitation that all of R_1 , R_2 , R_3 , and R_4 of Chemical Formula 4 and the formula in claim 21 do not represent hydrogen at the same time. Since Lee actually teaches away from the use of such alicyclic olefin derivative monomers in combination with cross-linker monomers, Lee's teaching would not render obvious the inventions of amended claims 20 and 21. It is therefore respectfully submitted that amended claims 20 and 21 are in condition for immediate allowance.

Double Patenting

Claims 1-3, 5, 7-17 and 19-21 are rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4-8, 10, 12, 16-19, and 21 of Lee. The Examiner contends that the conflicting claims are not patentably distinct from each other because claim 4 of Lee teaches because claim 4 of Lee teaches the photoresist polymer represented by Formula 10 (col. 6, line lines 18-67). However, applicants respectfully submit that amended independent claims 1, 5, 20 and 21, as well as the rejected claims respectively dependent thereon, are patentably distinct from the claims of Lee because the amended claims are neither anticipated nor obvious over claims of Lee for the reasons discussed in detail above. Accordingly, withdrawal of the double patenting rejection and allowance of the claims is respectfully requested.

Allowable Subject Matter

Applicants wish to thank the Examiner for indicating that the subject matter of original claim 4 would be allowable if rewritten in independent form. Claim 4 has been amended to remove its dependency from claim 3. Therefore, amended claim 4 should be in condition for immediate allowance

CONCLUSION

In view of the foregoing, Applicants believe that the present amendment places the application in condition for allowance and may be entered under 37 CFR 1.116. Accordingly, an Advisory Action indicating this action and a Notice of Allowance are respectfully requested.

Appl. No. 10/080,507

PATENT

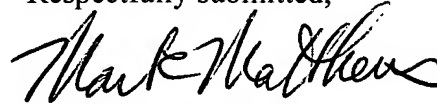
Amdt. dated July 12, 2004

Amendment under 37 CFR 1.116 Expedited Procedure

Examining Group

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,



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